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MEMORANDUM

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FROM: Karen W. DiBiasio, Ph.D. *Karen W. DiBiasio*
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DATE: April 7, 2015

SUBJECT: Former Pechiney Cast Plate, INC.
Responses to Comments - Phase III, IV And VI Soil Remedial Action
Completion Report

PCA Code: 11018 Site Code: 301396 WP: 00

DOCUMENT REVIEWED

Per your request, the Human and Ecological Risk Office (HERO) reviewed the February 25, 2015 "Response to DTSC Comments, Phase III, IV and VI Completion Report, Former Pechiney Cast Plate, Inc., Facility, 3200 Fruitland Avenue, Vernon, California" (RTCs) prepared by AMEC Environment & Infrastructure in Irvine.

BACKGROUND

HERO was requested to provide continuing toxicology and risk assessment support for the Former Pechiney Cast Plate, Inc. Facility (aka, Alcoa) in Vernon, California (Site). Previously, HERO reviewed the October 7, 2014 "Phase III, IV and VI Completion Report" (RACR) prepared by AMEC Environment & Infrastructure in Irvine and provided our comments in a November 18, 2014 memorandum.

According to the May 7, 2012 Feasibility Study, the Site is approximately 26.9 acres and the Pechiney facility consisted of one large single building of about 600,000 square feet

(sq ft). The Site was once part of a 56-acre, aluminum manufacturing facility owned and operated by the Aluminum Company of America (Alcoa) whose operations began in 1937. Alcoa used fuels and Stoddard solvent that were stored in underground storage tanks (USTs). Alcoa also used lubricating and hydraulic oils and generated hazardous waste that was stored at various locations throughout the Site. In 1999, Pechiney purchased the western portion of the former Alcoa property. At that time, Alcoa investigated subsurface conditions and conducted limited remediation in both the eastern and western portions of the former Alcoa facility as part of their efforts to seek the closure of its City of Vernon H&EC hazardous materials permit. In November 2006, Pechiney closed the facility and completed above ground demolition work that consisted of demolition and off-site transport of debris from the above-ground features, including the former manufacturing facilities.

The below-grade demolition in the Phases III, IV and VI Completion Report (RACR) consisted of removal of concrete building slabs, pavements, below-grade man-made structures (including footings, foundation, pits, and sumps), and other structures located adjacent to the former building areas. Also removed were underground piping and utilities in the upper 3 ft of soil beneath the concrete slab and buried rail road lines. The Phases III, IV and VI RACR also reports on soil remediation, but is limited to soil as the only environmental medium. Soil vapor and groundwater remediation are reported elsewhere.

SCOPE OF REVIEW

HERO reviewed the RTCs document for aspects relevant to human health risk assessment to determine whether soils remaining in place meet the remedial goals (RGs) and are protective of human health for current and potential future exposures. HERO assumes other DTSC staff have assessed the adequacy of the sampling and analysis methods for risk-based decision making, including that all metals used at the former facility were included in the analytical suite (for example, iron and/or tin).

GENERAL COMMENTS

1. The RTCs address many of the concerns brought up in HERO's 11/18/2014 memorandum. HERO recommends addressing outstanding comments from our 11/18/2014 memorandum in the revised RACR.
2. RTCs were adequate: HERO recommends including the explanations and proposed changes provided in the RTCs for the following comments from HERO's 11/18/2014 memorandum on the Draft RAC. General Comments: 6, 8, 9A1) through 9A5), 9B, and 9C2), Specific Comments: 1, 2, 3, 4, 5B, 5C.
3. RTCs combined with SVE information will be sufficient: To address HERO's 11/18/2014 General Comments 4, 9A1) and 9C1) as well as Specific Comment 5C, HERO continues to recommend including the information on the locations of SVE and radii of influence in the text and figures of the revised soil RACR.

4. RTCs were not sufficient: To address HERO's 11/18/2014 General Comments 2, 3, 5, 6, 7, 8, 9C1), 9C2), 9C3)a) and Specific Comments 5A and 5B, HERO provides recommendations below in the Specific Comments to either expand upon the RTC as requested, or provide the additional information and/or explanation requested in the revised RACR. For continuity, HERO's original comments on the RACR from our November 18, 2014 memorandum are provided below in italics followed by regular font explaining the additional information recommended by HERO for inclusion in the revised RACR.
5. Based on the RACR and the RTCs, the report appears to demonstrate the removal of soil from areas identified with concentrations above the approved risk-based cleanup goals (RBCGs) for the majority of the Phase III, IV and VI acreage. However, HERO does not agree with the conclusion that remaining soils are below site-specific remedial goals (RGs) with the exception of arsenic at the southern sidewall of Area 12 adjacent to the Union Pacific Rail Road fence. There are some locations that may remain with soil concentrations above RGs that may not be protective of human health for potential future occupational exposures, HERO is unable to draw a conclusion on the adequacy of the Phase III, IV and VI Soil RACR due to some aspects that still require clarification.

SPECIFIC COMMENTS

1. **HERO 11/18/2014 RACR General Comment #2:** *Phase II Area: There were no soil samples or soil removals for Phase II Area, consequently HERO cannot concur that soil remaining in place is protective of human health. HERO defers to DTSC Risk Management staff on the adequacy of evaluation of potential source areas and potential for contaminants at levels of human health concern.*

HERO apologizes for the typographical error, this comment was intended to refer to Phase VI. Based on information by Linda Conlan of Amec Foster Wheeler, only the southern leg of the Phase VI area along the buried train tracks was included in the soil investigation because the eastern leg of Phase VI was remediated by Alcoa. As discussed with Linda Conlan via telephone on 3/27/15, HERO recommends including a statement in the revised RACR regarding the process used to establish that there were no areas with soil impacts remaining in the Phase VI area except along the buried rail line; also provide the citation for the report containing this evaluation. HERO also recommends the revised RACR contain a figure depicting the boundaries of the entire Phase VI area and clarify in the text whether the entire area or only a portion of Phase VI is considered in the RACR; if only the southern portion is included in the RACR, HERO recommends including a reference to the RACR(s) containing the remaining portions of Phase VI. For transparency, HERO recommends revising the RACR to incorporate text summarizing the Alco investigations, findings, remediation and closure for Phase VI area, and include tabulated cleanup levels along with summary analytical data from the investigative sampling and analysis as well as post remediation

confirmation sampling; alternatively, cite the document that contains this information and provide a brief summary in the revised RACR.

- 2. HERO 11/18/2014 RACR General Comment #3:** *COCs for Phase III, IV, VI: The apparent intent of the Phase III, IV and VI soil removals was only to address metals and polychlorinated biphenyls (PCBs). The rationale for not including other chemicals of concern (COCs) with contamination levels above RGs was not presented. HERO recommends discussing the rationale in the responses to comments.*

For transparency and completeness, HERO recommends the revised RACR include discussion of all COC removals via all remedies. If RACRs have been or will be produced for groundwater and soil vapor, HERO recommends so noting in the revised RACR.

- 3. HERO 11/18/2014 RACR General Comment #5:** *RGs for VOCs: There are no RGs for VOCs, although as noted above in General Comment 4 soil VOCs have been identified as COCs in need of remediation. HERO recommends discussing in the responses to comments whether VOCs were evaluated in the risk assessment and the rationale for no RGs in the Phase III, IV and VI RACR.*

Since VOCs were detected in soil in high concentrations, HERO recommends including in the revised soil RACR (1) the soil VOC RGs and (2) expanding upon the explanation provide in the response to address which exposure pathways were evaluated in the screening level Human Health Risk Assessment (HHRA) and the HHRA outcome for VOCs in soil.

4. HERO 11/18/2014 RACR - Chromium RG / Hexavalent Chromium:

General Comment #6: *Hexavalent chromium: There are no RGs for hexavalent chromium (Cr^{+6}). The report did not address whether Cr^{+6} was used or generated in the former processes at the site, nor did the report address whether Cr^{+6} was an analyte of soil samples from areas with elevated total chromium. HERO recommends discussing in the responses to comments whether Cr^{+6} was included in the site characterization and risk assessment and present the results. If Cr^{+6} was not included in the site characterization and risk assessment, discuss the rationale for this decision in the responses to comments.*

Specific Comment #9.C.3)b): *Chromium remains at four times the RG in verification soil sample 885-SS-03 at 4 ft below former slab.*

- A. HERO recommends the revised RACR transparently disclose that the remaining chromium in soil was not speciated to evaluate whether hexavalent chromium may be present.
- B. Table 5 identifies 4 soil samples above total chromium background concentrations (25 mg/kg) with concentrations up to 101 mg/kg (885-SS-003) associated with railroad tracks; the highest concentration of 101 mg/kg is reported in Table 5 as a verification sample, i.e., remaining in place. The RTCs

noted that the RG for chromium of 25 mg/kg in Table 1 is background and the RG for total chromium was 640 mg/kg based on cancer. The RTCs included a revised Table 1 of RGs with both RG values listed for total chromium. In our teleconference on February 26, 2015 HERO clarified that carcinogenicity is due to hexavalent chromium. According to Table 1 in Appendix C of the Feasibility Study dated May 7, 2012, (a) the construction worker risk-based screening level is 8.5 mg/kg and (b) the carcinogenic toxicity criterion employed was one recommended at the time by EPA that is based on an assumption of total chromium consisting of a 1:6 ratio of hexavalent chromium to chromium. Previously, this assumption and toxicity criterion was applied for site risk assessments in the absence of speciation for hexavalent chromium; HERO recommends including a footnote in the revised Table of RGs, Table 1, with the clarification and rationale for use of a toxicity criterion that assumes presence of hexavalent chromium. HERO also recommends the text of the RACR include discussion on the processes formerly conducted at the facility, if chromium (trivalent or hexavalent) were used in the process and if hexavalent chromium may have been formed during site activities due to redox or pH conditions.

- 5. HERO 11/18/2014 RACR General Comment #7: PAHs:** *There are no remediation goals for polynuclear aromatic hydrocarbons (PAHs) or dioxins/furans which may have been formed, for example in the Swindell Furnace. The report did not address whether PAHs or dioxins and furans were included in the analysis of soil from the furnace pits or areas with residue. HERO recommends discussing in the responses to comments whether PAHs and dioxins/furans were included in the site characterization and risk assessment and present the results. If PAHs and/or dioxins/furans were not included in the site characterization and risk assessment, discuss the rationale for this decision in the responses to comments.*

HERO recommends including in the text of the revised RACR the fuel source for the Swindell pit furnaces.

- 6. HERO 11/18/2014 RACR General Comment #8: Other Phase III and IV issues:** *From a human health perspective, there were no sampling and analysis data and no removals from the following features depicted in Figure 9: Former Waste Disposal Pit (Phase IIIA and IIIB Areas), Former USTs (Phase IIIB and IV), and the Former Cooling Tower. Historically, industrial cooling towers used hexavalent chromium as an anticorrosive agent. HERO recommends including additional documentation and discussion regarding the risk evaluations for these areas in the responses to comments and the revised RACR.*

- A. HERO recommends including in the revised RACR demarcation of the extents of these previous soil removals on the appropriate figures; HERO suggests color coding excavation extents boundaries to identify dates of prior removals.
- B. Waste Disposal Pit (AKA, Inert Waste Disposal Pit) – IWDP-N, as well as many other IWDP samples are identified on Figure 9 of the RACR. HERO

recommends including in the revised RACR the data for all samples identified on any of the Figures.

7. **HERO 11/18/2014 RACR General Comment #9C1):** *TPH may remain in soil above RGs based on HERO's analysis of Table 4 and the corresponding Figures. Examples of locations with soil TPHs above RGs that either remain in place or were excavated with no confirmation soil sampling and analyses include 580-SS-001, 696-SS-008 and -009, #866, #898, #1264, and #1269.*

- A. The RTCs state samples #1264 and #1269 were excavated and verification samples were #1308 and #1307, respectively. The sample depths are confounding with #1264 from 4 ft below slab level (bsl) excavated and confirmation sample #1308 from 3 ft bsl; similarly, sample #1269 at 6 ft bsl was excavated and the confirmation sample #1307 was from 6 ft bsl. The confirmation samples, collected from the same or shallower soil depths, were 10 to 200 fold less than the excavated soil samples. HERO recommends confirming the depths reported are accurate and either amending Tables as necessary or including explanatory text in the revised RACR.
- B. The RTCs states the confirmation samples for both excavated soil samples 580-SS-001 (TPH_{mo} 34,700 mg/kg) and #866 (TPH_d 1400 mg/kg and TPH_{mo} 34,700 mg/kg) are #932 and #933, neither of which were analyzed for TPHs. HERO recommends providing additional clarification in the revised RACR to justify the confirmation that TPHs do not remain above RGs in the areas of samples 580-SS-001 and #866.

8. **HERO 11/18/2014 RACR General Comment #9C2):** *PCBs remain in soil above RGs as evidenced by samples W-1 and W-2. Based on HERO's analysis of Table 4 and the corresponding Figures, PCBs may also remain in soil above RGs at other locations. For example, no confirmation samples were taken from soil removals triggered by PCBs above RGs in samples 293-SS-001, -002 and -003, as well as 919-SS-02. Also, evidence of increasing concentrations of PCBs with depth in samples 568-SS-02 and -03, as well as 568-SS-06 and -07 for 3 and 5 ft below slab suggest that PCBs may remain in soil at concentrations above RGs. Furthermore, there are some instances where PCBs were less than RGs in deeper soil, however shallower soils were not analyzed at 815-SS-001 and 885-SS-01, 03, and -05. Lastly, some areas had PCBs present below RGs but only one soil depth was analyzed for PCBs at 587-SS-001 (10 ft), 820-SS-001 (9 ft), #866 (1 ft), and #898 (6 ft).*

- A. HERO recommends transparently disclosing that sample 919-SS-02 was above the RG and soil remains in place.
- B. HERO recommends adding a column or notes to the tables to indicate when the shallowest soil sampled was the first encountered soil beneath the concrete or other materials (e.g. rail road ballast).

- C. HERO defers to USEPA, the lead agency for PCBs cleanup at the Site, regarding leaving PCBs remaining in soil above RGs at W-1 and W-2 on Union Pacific Rail Road (UPRR) Property.
- D. HERO also defers to USEPA, the lead agency for PCBs cleanup at the Site, the potential that PBCs may also remain in soil above RGs in areas where only one soil depth was analyzed for PCBs at 587-SS-001 (10 ft), 820-SS-001 (9 ft), #866 (1 ft), and #898 (6 ft) that had PCBs present below RGs.
9. **HERO 11/18/2014 RACR General Comment #9C3)a):** *Metals, including arsenic, chromium, lead and others remain or may remain in soil at concentrations above RGs based on HERO's evaluation of Table 6 and corresponding Figures. Arsenic may remain in soil above RGs not only as identified in the report at the southern sidewall of Area 12 adjacent to the Union Pacific Rail Road fence, but also in areas where soil was excavated due to arsenic, but without any confirmation sampling and analysis, such as W-1, W-2, W-24, W-25, W-54, W-89, #1048, #1049, and #1051.*

HERO recommends the revised RACR disclose arsenic remaining above RGs may not be limited to the one area on the southern side wall of Area 12 (sample #1048 where further excavation was not possible because it was adjacent to the UPRR property boundary); arsenic may remain above the soil RG of 10 mg/kg because confirmation samples were not collected after the removal of soil samples #1049 (28.9 mg/kg) and #1051 (13.9 mg/kg) from 2.5 ft bsl at the western and eastern extents of the Area 12 removal area.

10. **HERO 11/18/2014 RACR Specific Comment #5A:** *Tables 4 through 6, Soil Sample Results for TPH, VOCs and Metals, respectively: The Tables contain some soil depths entries of NA which is defined in the Abbreviations as "not applicable". While this abbreviation may apply so some samples with the matrix of "other", HERO recommends including depths for all soil samples.*

Examples of soil samples with "NA" specified for the depth include Table 3 samples 658-SS-001, 755-SS-001 and #1016; Table 4 samples 696-SS-001 and 696-SS-002; Table 6: samples 696-SS-001, 696-SS-002, and #1016. HERO continues to recommend including the depths of all soil samples in the tabulated analytical results in Tables 3 through 6.

11. **HERO 11/18/2014 RACR Specific Comment #5B:** *Tables 4 through 6, Soil Sample Results for TPH, VOCs and Metals, respectively: To improve data interpretation, HERO recommends adding a column to identify the depth below ground surface. The Tables currently have only soil depth below slab. Furthermore, the report does not specify whether the soil depth below slab is the depth below the former building foundation slab or the sump/pit bottom.*

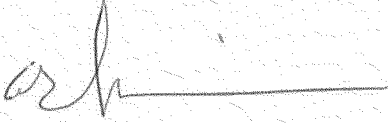
HERO recommends the revised RACR include the explanation provided in the RTCs and also address the level of current and proposed grading with respect to


sample depths. The explanation may be added as a footnote to the data tables. For human health risk, the depth of clean cover (current and under the proposed grading plan) would be a useful component to demonstrate lack of complete exposure pathways from areas with soil removals or samples remaining in place.

CONCLUSIONS

HERO reviewed the Former Pechiney Cast Plate, Inc. Facility (aka, Alcoa) in Vernon, California (Site) February 25, 2015 Response to DTSC Comments, Phase III, IV and VI Completion Report. HERO recommends incorporating into a revised RACR the information from the RTCs and documentation requested herein to allow HERO's final interpretation of achievement of soil remedial goals protective of human health. HERO recommends submittal of a revised RACR incorporating elements addressed herein using red-line/strike out, or a similar means to easily identify changes, and including a cover letter specifying for each comment herein where it is addressed in the revised RACR and any changes made that were not specific to the comments herein.

Please contact me at (916) 255-6633 or karen.dibiasio@dtsc.ca.gov if you have any questions.

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